

**FEDERAL ELECTRONIC DATA INTERCHANGE
STANDARDS MANAGEMENT
COORDINATING COMMITTEE
(FESMCC)
CHARTER AND
OPERATING PROCEDURES**

Version 1.0

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Information Technology Laboratory
National Institute of Standards
and Technology
Gaithersburg, MD 20899

FOREWORD

Federal Information Processing Standard Publication (FIPS PUB) 161-2 sets forth the following objectives:

- (1) To ease the interchange of data sent electronically by use of common standards that allow for automated message processing;
- (2) To promote the achievement of the benefits of EDI: reduced paperwork, fewer transcription errors, faster response time for procurement and customer needs, reduced inventory requirements, more timely payment of vendors, and closer coordination of data being processed on different computers for the same application;
- (3) To promote migration to a universally used family of EDI standards, in order to further Government efficiency and to minimize the cost of EDI implementation by preventing duplication of effort.

Pursuant to this, in order to provide coordination of Federal EDI standards development and implementation, FIPS PUB 161-2 states that "the Federal EDI Standards Management Coordinating Committee (FESMCC) is established to support the goal of a single face for the Federal Government to its trading partners in the use of EDI".

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1.0 Introduction

1.1 Background

The President through the National Performance Review has stressed the importance of modernizing various Government processes through the use of Electronic Data Interchange (EDI) to replace paper.

A major focus is to use international and national standards and to ensure the Government provides a single face to trading partners, thereby achieving a more efficient, effective operation for the Federal, State, and local governments and the private sector community. Federal Information Processing Standard Publication (FIPS PUB) 161-2 requires Federal agencies utilizing EDI for exchanging business information to use the American National Standards Institute's (ANSI) Accredited Standards Committee (ASC) X12, United Nations Electronic Data Interchange for Administration, Commerce and Transportation (UN/EDIFACT), or Health Level 7 (HL7) syntax standards. There is a need for an interagency committee to coordinate the development and maintenance of Federal implementation conventions (ICs) to delineate the Government interpretation and usage of these standards in all functional areas where EDI is appropriate.

1.2 Authority

The OMB Circular A-119 encourages all Federal agencies to participate in developing national standards to satisfy their needs. The National Institute of Standards and Technology's (NIST) FIPS PUB 161-2 specifies an interagency committee to coordinate EDI efforts in Government. NIST will provide technical guidance to the FESMCC. The FESMCC will provide an annual summary of its activities to the Office of Management and Budget (OMB).

1.3 Purpose

Pursuant to FIPS PUB 161-2, the FESMCC shall endorse and promulgate Government-wide implementation conventions for EDI. The FESMCC will provide government-wide support and coordination of the development and continued maintenance of implementation conventions required to ensure fulfillment of Federal agency business requirements through Electronic Data Interchange. Through this process Federal agencies will work with the private sector and state and local governments to streamline data exchange processes. The FESMCC will provide a clearinghouse for implementation conventions, serve as an advocate for the use of EDI and facilitate its expansion in the Government.

1.4 Goals and Objectives

The goals of the FESMCC are a single Federal Government face to trading partners, consistency among instances of an application across agencies, streamlined data, and coordinated Government representation at standards bodies. Functions of the FESMCC include harmonization of development of EDI transaction set and message standards among Federal agencies, and the setting of Government-wide implementation conventions for each functional use of these EDI transaction sets or messages used by Federal agencies. Specific information regarding the FESMCC is given in section 9 of FIPS 161-2. This document gives operating procedures as appropriate to effectively implement the above-stated goals and objectives. In particular, Chapter 3 gives general roles and responsibilities, and Chapter 4 gives more detailed responsibilities pertinent to management issues.

1.5 IC Registration Process

For a concise listing of the Federal IC process, consult Appendix D.

1.6 References

References used in the preparation of this document are in Appendix A.

1.7 Acronyms

Acronyms relevant to this document are listed in Appendix B.

1.8 Glossary

Appendix C is a glossary of terms used in this document.

1.9 Changes

This document will be reviewed at least annually by the FESMCC, and the need for revisions, additions or deletions will be assessed. This document can be updated by a consensus vote of the FESMCC.

Address proposed changes to this document to:
EDI Standards Management Program – Secretariat
NIST NORTH – Room 458
Information Technology Laboratory
NIST, Gaithersburg, MD 20899

2.0 EDI Information Technology Standards

2.1 Introduction

There are organizations nationally and internationally which develop standards for IT, and to the greatest extent possible, the Federal Government should draw from these standards to satisfy its EDI development programs. In some cases, this is not possible, and Federal and even agency level standards may be necessary. The major standards development organizations relevant to this Federal effort are introduced in this chapter.

2.2 Voluntary Industry Standards

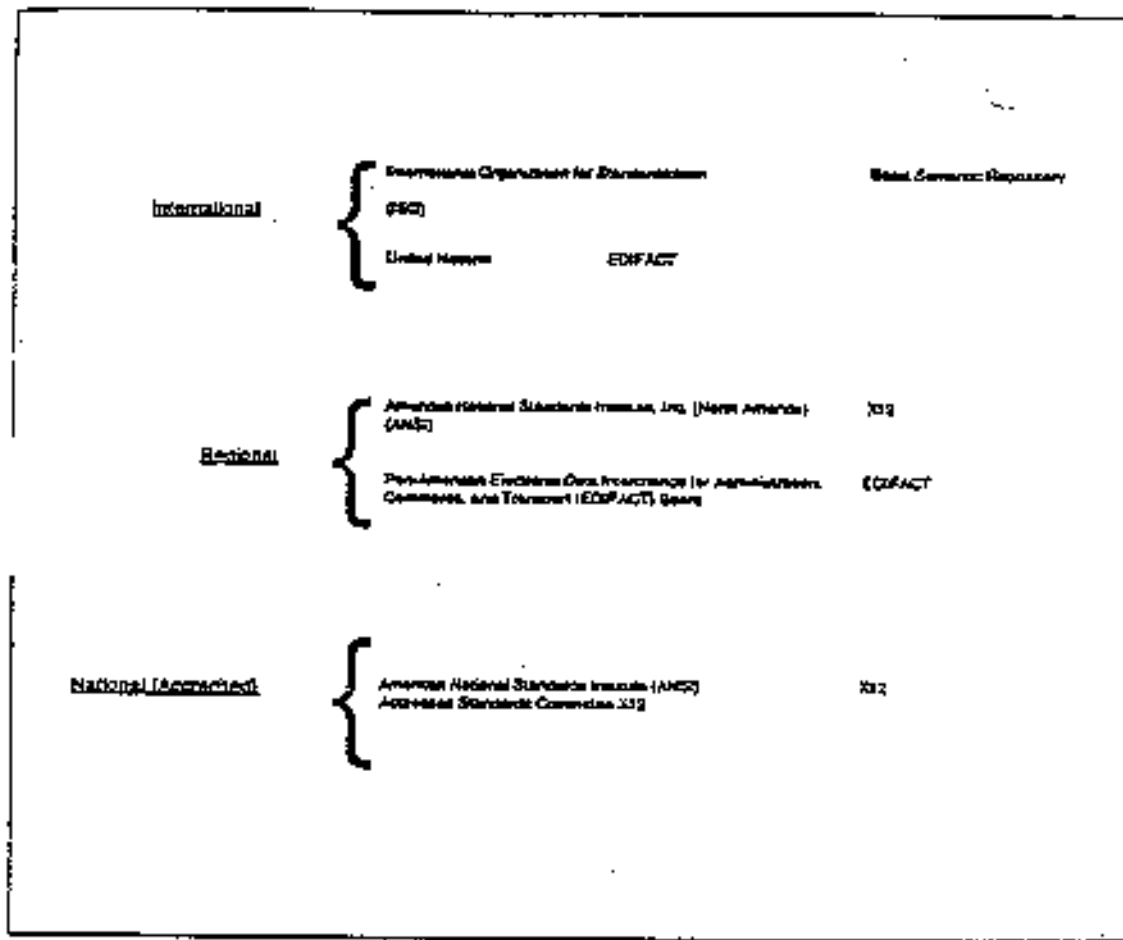
These are standards developed by nationally and internationally recognized standards bodies, voluntary bodies, consortia, and various international treaty and multilateral and bilateral agreement bodies. Figure 1 shows some of the key voluntary industry standards bodies (along with their associated standards) that are of interest to the Federal Government. Federal agency representatives are used to ensure consideration of U.S. Government interests in the work of the external EDI standards fora. This is the principal means of fostering the adoption and development (including the consideration of unique Federal Government needs) of EDI standards for Federal use. Federal requirements in external standards bodies must be supported, coordinated, and clearly stated if the Federal Government is to adopt and harmonize its use of voluntary industry EDI standards successfully.

In 1979 ANSI chartered the ASC X12, Electronic Data Interchange Committee, to develop uniform standards for electronic interchange of business transactions. The X12 committee develops standards to facilitate electronic interchange relating to such business transactions as order placement and processing, shipping and receiving, invoicing, payment, and cash application data associated with the provision of products and services. The X12 transaction sets generally map a traditional paper document to an electronic format that can be passed easily over telecommunication networks. Each transaction set includes many segments containing the data needed for the business function as well as instructive information to ensure that the telecommunication system routes the data to the correct place. These X12 transactions are transmitted to the trading partner (TP) by using either the X12.56 mailbag protocol, the X.400 electronic mail (Email) protocol, the Simple Mail Transfer Protocol (SMTP), or the Multimedia Internet Mail Extensions (MIME) protocols.

2.3 Federal Standards

Federal standards are documented in Federal Information Processing Standards (FIPS) publications, published by NIST. NIST is also empowered to publish the Special Publications (881) series.

Figure 1
Key Voluntary Industry Standards



The primary Federal standard for EDI is FIPS PUB 161-2, entitled "Electronic Data Interchange". FIPS PUB 161-2 adopts the following families of EDI standards: ASC X12, UN/EDIFACT, and HL7.

Departments and agencies implementing EDI systems will select one or more of these standards for use, subject to certain conditions. These conditions are usually a matter of agreement between trading partners.

EDI syntax standards, ASC X12 and UN/EDIFACT, are intended to accommodate a full range of business activities for all industries. They are developed by consensus among a large number of users, each with his/her own set of needs. The resulting standard is very broad and is intended as a superset to meet the diverse requirements of all users. They commonly contain more data elements and structure options than any one user or industry needs. In fact, they often contain a multitude of

optional ways of conveying the same information. The value of EDI syntax standards is in providing the general rules and structure to allow general purpose implementations to "get in the right ball park".

But the standards are too broad for direct implementation. The set of options and code values available in each transaction set needs to be considerably narrowed for any particular industry need, so trading partners must agree on implementation conventions. These ICs, based on either X12 or UN/EDIFACT, define the exact transactions required by the systems implementors to conduct business by tailoring the use of the standards' segments, data elements, and code values. In addition, they document the intended interpretation of a standard. ICs remove the ambiguity of which segments and data are used in each context and document the different interpretations of the standard.

2.4 Departments and Agencies

Federal departments and agencies may for efficiency reasons require an even narrower set of ICs for use with their own particular trading partners, and thus they may create internal groups to identify these needs. These groups may identify requirements for new ICs or changes to ICs based on legal, policy, procedural, or systems requirements. Any such changes which seek to broaden the scope of the Federally agreed ICs must first be agreed by the interagency working groups.

2.5 Applicable Standards

For electronic data interchange (EDI) in the Federal Government, all relevant FIPSS and Federal standards are applicable. The applicable national and international standards are the following:

- (1) American National Standards Institute Accredited Standards Committee (ASC) X12 Electronic Data Interchange (EDI);
- (2) United Nations Electronic Data Interchange for Administration, Commerce, and Transport (UN/EDIFACT)
- (3) Health Level 7 (HL7)

Activities within and among the agencies in response to the Government initiative may well result in more partnerships that use X12 than UN/EDIFACT. ASC X12 is generally recognized as the North American EDI standard, it is widely implemented and it is also well supported in a number of Pacific Rim nations. Most industry-specific standards have committed to aligning themselves with ASC X12. Federal agencies using industry-specific standards on 30 September 1991 may continue to do so for five years from that date. Agencies with international trading partners should use UN/EDIFACT. Industry-specific standards may be used beyond five years only if no equivalent ASC X12 or UN/EDIFACT standard is approved by 30 September 1995. Both ASC X12 and UN/EDIFACT consist of a number of underlying standards and address a wide range of business requirements.

The HL7 standards were developed by Health Level Seven, Inc., an ANSI-accredited standards developer. The HL7 standards are adopted as an alternative for certain healthcare applications, specifically for transmission of patient records and of clinical, epidemiological, and regulatory data. HL7 standards are not to be used for healthcare insurance administrative applications, or for any aspect of the Government procurement cycle.

3.0 Roles and Responsibilities

3.1 FESMCC

The FESMCC:

- (1) Meets periodically to ensure work is consolidated for submission in accordance with the policies and procedures contained in OMB Circular No. A-119, and to ensure that work required to be submitted to the standards bodies is completed
- (2) Establishes interagency Functional Workgroups for areas such as finance, procurement, healthcare, transportation, etc. as required to provide a focal point for development and maintenance of ICs
- (3) Coordinates activities of the Functional Workgroups (FWG) to ensure that they are working quickly and efficiently to provide useful implementation conventions for Federal agencies in accordance with the responsibilities detailed above and the goals and objectives of the FESMCC. Votes (such as moving ICs to the Registry (see Appendix F), issue positions, etc.) shall require two-thirds of respondents to pass; quorums shall be 51% of membership (see Appendix G for a current list of FESMCC members). An agency who does not have any anticipated use for an IC under ballot may vote “abstain” or “no interest”. These votes will count toward quorum, but not the approval percentage. Votes not received within 5 days of the due date will automatically be considered abstentions so that a quorum can be reached and the action item closed. The Chair will send reminders 5 days prior to the due date. Implementation conventions shall be evaluated on the following criteria, whether submitted through a functional workgroup or by a single agency:
 - a. Conformance to the base standard: standards compliant
 - b. No duplicate business functionality in the same version and release
 - c. All public comments addressed
 - d. All business requirements met
- (4) Coordinates with the FESMCC Secretariat to ensure:
 - a. All Federal ASC X12 and UN/EDIFACT maintenance actions are identified and processed promptly
 - b. Prompt distribution of ICs for public comment, and

- c. Dissemination of ICs after approval
- (5) Coordinates Federal Government participation at standards bodies to promote:
 - a. Adequate representation at applicable committee subcommittee, or other working level groups to present the Government business case
 - b. Consolidated position on issues of interest (including data maintenance) to the Government or to the standards body. Issues should be resolved as much as possible prior to standards bodies' meetings. Government agency representatives shall meet as required at the meetings to discuss positions with the FESMCC chair or designated representative.
- (6) Provides agencies assistance in the use and interpretation of ICs and standards
- (7) In addition to the representative from each agency, the FESMCC will contain the chairs of each FWG and a FESMCC Secretariat representative in the voting membership. (NOTE: The chairs are not voting members.)
- (8) Elects a chair, who serves for an indefinite term
- (9) Elevates policy issues or unresolved disputes to OMB as deemed necessary to achieve the goals of the Committee

3.2 Functional Workgroups

The Functional Workgroups (FWGs):

- (1) FWGs shall be established by the FESMCC, to expedite development and maintenance of EDI Federal ICs. They shall contain a primary and alternate agency representative from each interested agency in the designated functional area. FWGs are listed in Appendix E to this document.
- (2) Meet periodically to identify issues or work on ICs
- (3) Identify business requirements, map them into existing or proposed X12 transaction sets or UN/EDIFACT messages, and develop or update corresponding implementation conventions
- (4) Provide guidance to agencies on appropriate ASC X12 procedures for submitting data maintenance requests. May initiate data maintenance requests where the need is identified during the development of the implementation convention. Participate in the advocacy of the

data maintenance to the standards bodies as required.

- (5) Review private sector data maintenance to determine impact on or application to Federal programs.
- (6) Resolve business needs or provide other solutions agreed upon by the requesting party. Review and resolve comments and requests from the agencies and the public, responding with explanations on decisions reached. Determine if changes are significant enough to require another public comment period. Maintain an audit trail to show how requirements were met, what changes were made, and why. If there was a previous IC, prepare a Record of Change for each successor IC.
- (7) Evaluates whether the comments submitted with Disapprovals are of such significance that a rebalot or even a new public comment period may be required, based on the significance of the changes. New requirements submitted on a ballot which would create a significant change should not delay approval. FWG may determine to incorporate such requirements in a revision after the IC is approved. Significance is generally defined as a structural change, not adjustments to code values. The rationale shall be submitted to the Chair, FESMCC for final decision as to rebalot or new CBD.
- (8) Receive guidance from appropriate interagency groups or forums for that functional area such as the President's Management Council EDI Task Force, the CFO Council (Finance FWG), and the Office of Federal Procurement Policy (OFPP) (Procurement FWG), etc.
- (9) Make decisions through a consensus process modeled after ASC X12 operating procedures, as defined in each FWG. All FWG IC updates are passed to the FESMCC for review and submission to the Registry (see Appendix F).
- (10) Elect a chair who then is a non-voting member of the FESMCC. The chair communicates with the FESMCC on appropriate issues. Either the chair or his/her designated representative may attend meetings of the corresponding functional group of the national or international standards body as a liaison for the FWG when there are issues of importance to the FWG. The chair's term is indefinite subject to the discretion of the FESMCC chair. The election of a chair should be notified to the FESMCC.
- (11) Coordinate appropriate technical analysis and/or testing. This should be done prior to any public comment and again prior to FESMCC ballot.

3.3 Federal Agencies

Federal Agencies:

- (1) Provide a primary and alternate representative for the agency in designated functional areas (e.g., procurement, finance) to each Functional Work Group (FWG) identified in Appendix E. Participation will be on a periodic scheduled basis. If the agency chooses not to actively participate, they may receive minutes of the FWG meetings and comment on proposals.
- (2) Provide a primary and alternate representative to the FESMCC who has overall knowledge of EDI standards to speak for the agency. Agency representatives should coordinate closely with their FWG representatives to identify any issues prior to an FESMCC meeting. If the agency chooses not to actively participate, it may receive minutes of the FESMCC meetings and comment on proposals.
- (3) Provide any additional representation as required or desired as support for particular FWG or FESMCC meetings. Additional representatives are not voting members.
- (4) Provide any business requirements for EDI implementation conventions, to include agency unique transactions, for review and incorporation in the Federal IC Registry. Details of their respective business process and purposes should be included. This will facilitate efficient use of EDI systems and resources, public availability and compliance testing where applicable. If other agencies indicate interest in the application or have similar business requirements, joint development should be pursued if it meets the business needs and makes technological and economic sense.
- (5) Establish an EDI team to address these issues in order to ensure that internal consensus is reached and the agency representatives are able to represent the needs of each entity. The team may mirror the FWG/FESMCC structure.
- (6) Should initiate new and innovative uses of EDI to reduce transaction costs, eliminate data rekeying at all levels and expedite business processes for Government as well as the private sector.
- (7) Will utilize the ICs registered through the FESMCC and shall not create separate EDI ICs for the same functional requirement.
- (8) Will submit data maintenance request(s) for transactions not covered by a FWG through the FESMCC Secretariat or simultaneously to the FESMCC Secretariat and ASC X12 to ensure wide Government distribution, reduce duplication of effort, and facilitate impact analyses.
- (9) Provide votes on ICs in a timely manner, whether Approval, Abstention or Disapproval. Disapprovals must have comments included. Comments shall be based upon technical deficiencies or failure to resolve business case issues, in accordance with par. 3.1(3). Preference for code values, format, etc. are not grounds for a disapproval and may be ignored by the FWG.

3.4 FESMCC Secretariat

NOTE: For Registry references, see Appendix F

The FESMCC Secretariat:

- (1) Provides technical guidance on the standards process and the Registry
- (2) Maintains the official Registry of Federal ICs to include programs to:
 - (a) Compare different inputs, ICs or standards to identify differences
 - (b) Provide electronic remote access capability to the Registry
 - (c) Provide appropriate electronic access to draft and final ICs, logging comments and routing them to appropriate FWGs
- (3) Maintains configuration management of ICs and data maintenance
- (4) Processes required data maintenance to external standards bodies
 - (a) Formats maintenance recommended by FWGs in accordance with standards body's requirements, forward them to the standards body and tracks their progress
 - (b) Logs maintenance actions pending in standards bodies that affect Federal ICs and routes them to the appropriate FWG(s) for action with an impact analysis
- (5) Maintains an electronic source for electronic commerce news for public information and receives comments and questions
- (6) Develops and maintains procedures to accomplish these functions
- (7) Provides support services:
 - (a) Staffing, hardware, and software required to maintain the Registry of Federal ICs
 - (b) Programs facilitating the comparison of different documents
 - (c) Meeting space as required; and
 - (d) Secretariat administrative-type services.

- (8) Provides training and documentation to Federal agencies as required on the use of the Registry and any formats it utilizes.

3.5 NIST

The National Institute of Standards and Technology (NIST) has been formally designated as the FESMCC Secretariat currently. If this changes in the future, notification will be given in this document.

4.0 Management Issues

NOTE: Functionality in this section may be future functionality and pertain to Register functionality. See Appendix F.

4.1 Standards Management

Federal EDI standards management uses the processes identified by the FIPS, staffing from across the agencies, and technical and administrative resources of the FESMCC Secretariat, which will together provide the functional, technical and management efforts to standardize the EDI concepts that affect interoperability between Federal agencies and their trading partners. In his memorandum of October 26, 1993, the President insisted on a "single face to industry". The development and usage of common conventions across the Federal Government is the path to this goal. It can only be achieved by functional area experts throughout the Federal Government working together in a common standardization process, which is intimately associated with real world needs.

The OMB Circular A-119 encourages all Federal agencies to participate in developing national standards to satisfy their needs. Departments and agencies assist in coordination through discussion and agreement on standards issues through Functional Workgroups (FWGs). Out of this forum Federal agencies agree to present a single unified Government position. Representatives at the development level, from concerned agencies, ensure the recognition of Federal needs and initiate actions to consider incorporating those needs into ASC X12 standards. The Government also seeks to influence the direction of standards work at the executive level by providing representation, from concerned agencies, to selected national and international standards policy body organizations and committees. These executive level organizations include those concerned with standards approval, planning, policy, operations, and management issues.

The FESMCC Secretariat provides dual supporting roles in the Federal Government's EDI management structure:

- (1) The role of Workshop administrator; and
- (2) The role of technical support

In the role of Workshop administrator, the FESMCC Secretariat provides meeting space for FESMCC and FWG meetings, informs participants and other interested parties about meeting logistics and technical input materials, and also coordinates output materials. This role is performed through communication with the FESMCC Chair and FWG Chairs, who are responsible for providing meeting inputs and outputs to the Workshop secretariat.

In the role of technical support, the FESMCC Secretariat provides the Registry of Federal Implementation Conventions on-line, made fully and freely available to anybody who needs access to it,

including developers, users, and commercial interests. The Registry is available through the Federal EDI home page, which can be accessed through the World Wide Web on the Internet. The ICs will be published as NIST Special Publications (Series 881).

In order to maximize electronic development, the Registry on its own is not sufficient. Each FWG member must also have available tools to download and manipulate transaction sets, to compare the changes, and to assess impacts against the base version. In conjunction with EDI tool suppliers and concerned agencies, a transfer syntax has been evolving which could in the future enable any and all interested EDI tool suppliers to have their tools communicate with the Registry.

In this technical support role, the FESMCC Secretariat also provides help to FWG members to get them familiar with the technology, specifically the Registry. To the extent that these functions are accessible through commercial products used by FWG members, it is hoped that individual commercial suppliers will provide support and help to acquaint their users with the primary interfaces to the Registry.

Because the role of technical support requires the FESMCC Secretariat to maintain an interface with X12, the FESMCC Secretariat participates in X12 Technical Assessment Subcommittee J, to coordinate Federal Government data maintenance requirements.

4.2 General Configuration Management

4.2.1 Introduction

The end goals of configuration management are to make publicly available implementation conventions which are protected from change, yet to allow the possibility of controlled evolution of ICs, to match improvements in business process efficiency, and changes in business need. As a result, current implementation conventions, based on a particular version of a particular standard, are maintained free from change for a period of time determined by the FESMCC, and made widely available to users, including agencies and their trading partners. Suggested changes to implementation conventions, and new ICs based on expanded functional scope, are generated by the FESMCC FWGs. After FESMCC approval, and according to the FESMCC determined timetable, the latest Federal ICs are made available for live use. To the maximum extent possible, the configuration management of current and previous ICs, suggested and approved changes, and base standards actions outstanding, will be conducted using on-line tools. The system envisioned to cohere the standards management process is described Appendix F.

Items subject to overall configuration management include:

- (1) The enhancement and management of standards approved for Federal use (see FIPS 161-2),
- (2) The currently deployed set of implementation conventions approved for Federal use.

Items which are an integral part of the standards development process which must be registered and tracked, but which are subject to change, are accumulated changes to the IC, submitted but not yet approved for inclusion in the next version of ICs. These can be input by authorized FWG members participating in the standards development process.

The initial set of Federal implementation conventions, based on ASC X12 Version/Release 3040, were formulated by the Electronic Commerce Acquisition Team (ECAT), after consultation with many agencies, and synthesizing their requirements. Today, these conventions are available from the FESMCC Secretariat via the World Wide Web, FTP, and the Registry.

Access information is as follows:

- (1) WWW URL: <http://www.antd.nist.gov/fededi> (ASCII, postscript, or Acrobat PDF)
- (2) FTP: <ftp://www.antd.nist.gov/pub/fededi/>. Commands:
 - (a) `ftp www.antd.nist.gov`
 - (b) Login: anonymous
 - (c) Password: Your email address
 - (d) `cd pub/fededi`
 - (e) `get<filename>`(several sub-directories are available)
 - (f) `bye`

NOTE: These commands only apply to UNIX FTP, and might be different with other versions of FTP.

The custody and publication of implementation conventions developed by Federal Functional Working Groups requires interaction between the FESMCC Secretariat, FWG, FESMCC, and the agencies. The intention for the future is to have a registry based process with uploads and downloads of ICs, and uploads of data maintenance requests, which allows for automated tracking and comparison of DMRs. The publication of ICs will also use WWW and FTP from the snad.ncsl.nist.gov system. Future automation is discussed in detail in Appendix F.

4.2.2 Draft ICs

Each IC published by NIST for the Federal Government for external use (not OPAC) must be announced in the Commerce Business Daily for public comment. Draft ICs are not recommended for operational use. The Federal FWG is responsible for delivery of each IC and Record of Change to be published, and any change to Commerce Business Daily announcement, two weeks prior to the

intended publication date. Delivery should be effected to the FWGs "~fwg-mail" account @snad.ncsl.nist.gov (e.g., Procurement Functional Working Group address would be pfwg-mail@snad.ncsl.nist.gov). The CBD announcement text may be delivered as ASCII text. This announcement is a request for comments. The Federal FWG is also responsible for processing received comments, and returning a disposition for each, repeating the update and public comment cycles, if necessary, and moving agency-specific ICs to Registry and common format. Public comments are only required if there has been no previous public comment period.

The FESMCC Secretariat is responsible for:

- (1) Making draft ICs and Record of Change available for public review on the WWW at: "http://snad.ncsl.nist.gov/fededi" and via ftp at "ftp://snad.ncsl.nist.gov/pub/fededi/functional-working group-sub-directory" (e.g., Procurement Functional Working Group will have the directory PFWG available)
- (2) Informing all FESMCC members of publication
- (3) Arranging for publication of the CBD announcement. The announcement should include a technical contact point, a FESMCC Secretariat contact point, a description of the matter to be commented on, the electronic location for the technical material, the place (mail and electronic) where comments should be addressed, and a health warning designed to discourage implementation of these draft ICs
- (4) Publicizing the draft ICs over all available electronic mail groups
- (5) Collecting and delivering comments to the FWG chair, in a timely manner
- (6) Deleting the public comment version of the IC after the period expires

4.2.3 Format

The standard format for ICs will be as follows:

- (1) Heading -Times New Roman-20-Bold
- (2) Subheading-Times New Roman-12-Bold
- (3) Level 1 Notes -Times New Roman-10-Bold-Italic-Shading
- (4) Page Header-Times New Roman-9
- (5) Page Footer-Times New Roman-9

- (6) Top of Loop-Shading
- (7) Page Break-Between segments
- (8) Usage Indicators-Must Use, Rec., Not Rec., Not Used
- (9) TS Purpose-Displayed
- (10) Segment Purpose-Displayed
- (11) Unused Segments-Suppressed (display in Table)
- (12) Unused Elements - Displayed
- (13) Element Description-Displayed
- (14) Code Value Expl-Displayed
- (15) X12 Notes - Displayed
- (16) X12 Comments - Displayed
- (17) X12 Semantic Notes - Displayed
- (18) X12 Data Dict Ref. - Displayed

4.2.4 Final ICs

NOTE: This section needs to be discussed. There is currently no defined procedure for draft ICs for use.

After a draft period during which comments are received and incorporated, each IC will be issued in final form. The Federal FWG must go through the same cycle as for drafts, except in addition, the ICs must be formally approved by the FESMCC before publication. Final ICs are valid until superseded, in accordance with FIPS 161-2.

The Federal FWG submits ICs for FESMCC approval. For this purpose, NIST can arrange to publish a limited number of paper copies.

The Federal FWG is responsible for:

- (1) Development and submission to the FESMCC for approval, and to the FESMCC Secretariat, the corrected text of the ICs

- (2) The text of the CBD announcement, noting final approval of the IC and its availability for earnest use in stable form . This is a public information announcement.
- (3) Summary of comments received and their disposition
- (4) Notification of planned implementations. The following information should be included to the greatest extent possible: a list of agencies or systems which will use the IC; the projected effective date(s); and an indication if it will go over the infrastructure. This information will be provided to certified VANs and software firms to allow them to prepare for processing the IC.
- (5) Submission of a Record of Change from previous version(s) for posting to the website.

The FESMCC is responsible for:

- (1) Approval, or otherwise, of finalized ICs submitted by the FWG
- (2) Conveying the approval status to the FESMCC Secretariat,
- (3) Notifying VANs via DISA technical representative (such information should include TS, Version/Release, Title, and possibly FWG/Agency)

The FESMCC Secretariat is responsible for:

- (1) Making final ICs available electronically, as above
- (2) Arranging for publication of the CBD announcement announcing approved ICs
- (3) Publishing the ICs on paper, as a NIST Special Publication Series (Series 881)
- (4) Maintaining availability of the issued IC until such time as the FESMCC indicates that it should be retired. After that point, although backup electronic archives will be retained, paper copies of obsolete ICs will no longer be stored.
- (5) Possibly, creating an “archives” section of the registry, for ICs no longer found to be in use

4.2.5 Revisions

After a period of operational use it may be discovered that a change must be made to an IC. Recommendations can be conveyed to the Functional Working Group concerned, via the NIST email facility. After due consideration of the problem, the FWG may choose to issue a revision to a particular IC, with FESMCC approval. Such a revision must be published as an addendum to the IC. The FWG is responsible to conduct the procedures as for final IC, above. Errata that does not

constitute a significant change (e.g., code additions may be posted/issued with a CBD notification that changes have been made. Significant changes require a new public comment period via the CBD.

The FESMCC Secretariat is responsible for publishing any such approved revised ICs, with a record of changes, as electronic addenda to the WWW Page, and as paper addenda to the NIST Special Publication Series 881. Figure 2 gives a summary of the Federal IC process.

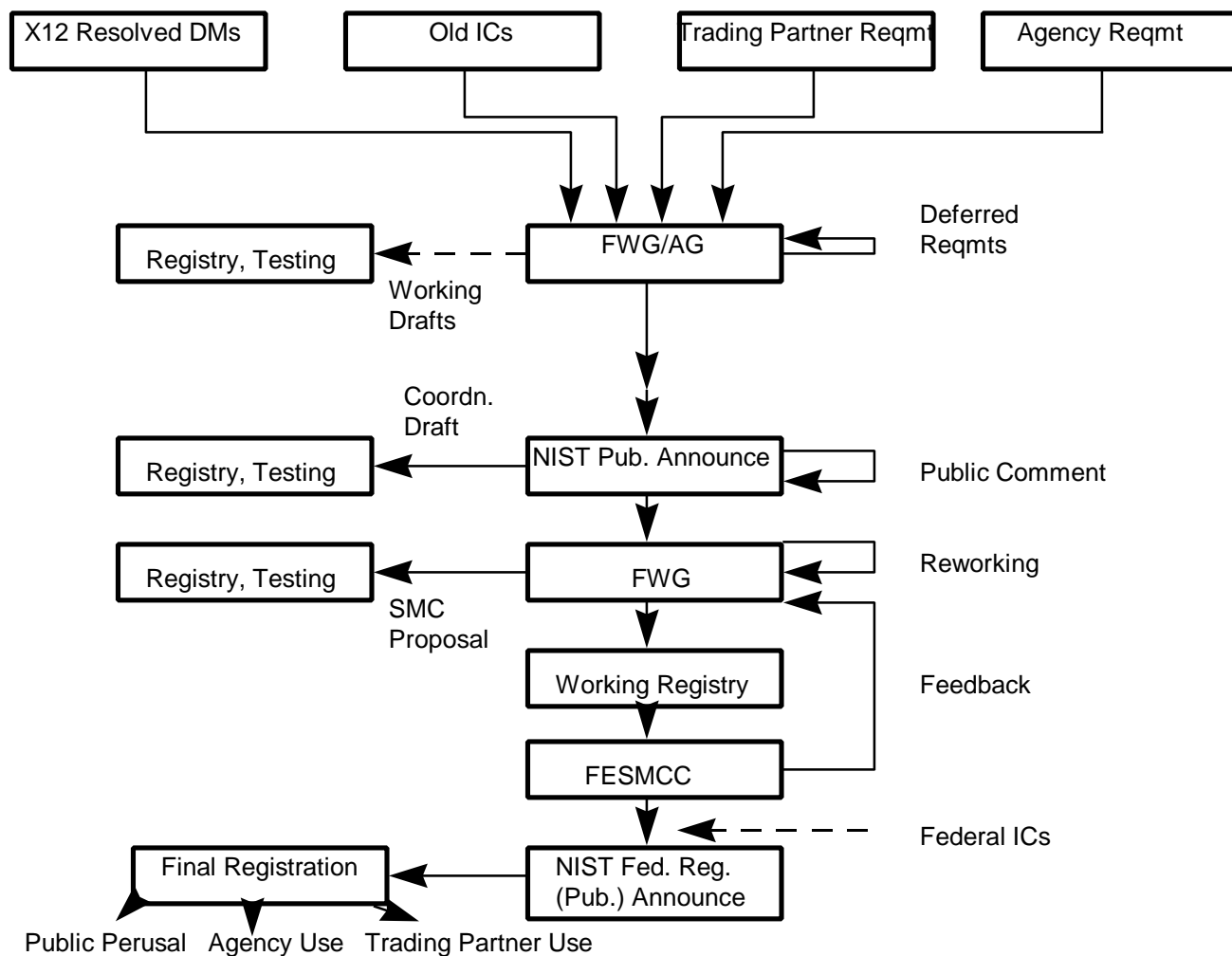


Figure 2
The Federal Implementation Convention Process

4.2.6 File Naming

Each file name will consist of the following:

- (1) Position 1: Type of Standard (DOD, Federal, etc.) (D = DOD, F = FED, etc.)
- (2) Positions 2 through 4: Transaction Set (843, 850, etc.)
- (3) Position 5: Used to distinguish variants of a transaction set designed to satisfy a particular business application. (Example: 810PV = 810 Public Voucher, a variant of Transaction Set 810-Invoice.) Also used to describe variants based on system specific usage (Example: S8505 =SAACONS version 2.5 Purchase Order)(NOTE: If not required to distinguish variants, one “_” underscore will be inserted to maintain position placement)
- (4) Position 6: Configuration Management Status (P = Proposed - red cover) (D = Draft - yellow cover) (A = Approved - green cover) (F = Final - grandfathered(operational prior to establishment of FESMCC))
- (5) Position 7: User Version (U = User)
- (6) Position 8: Type of File (see note below) (S = .SEF) (P = .PDF) (R = .RTF) (T = .TXT)
- (7) Position 9:File Separator Period (.)
- (8) Positions 10 through 12: X12 Version (203 = 002003) (310 = 003010, etc.)

NOTE: .SEF (Standard Exchange Format) files are for importing into EDISIM2 software or other software which can utilize the .SEF formats. .RTF (Rich Text Format) files are word processing files which can be used/imported into DOS or Windows word processors. .PDF (Adobe Acrobat Portable Document Format) files are files from document generation software which can be viewed or printed, and from which text can be copied and pasted into DOS or Windows word processors. .TXT (ASCII Text) files are files which can be used/imported into DOS or Windows word processors.

EXAMPLES:

- (1) File Name-D810VDUP.203 :Explanation- DOD, Transaction Set 810, Public Voucher variant, Draft, User Version, PDF Format, X12 Version 002003
- (2) File Name-D810_PUS.310 :Explanation-DOD, Transaction Set 810, Proposed, User Version, .SEF Format, X12 Version 003010
- (3) FileName-S8505FUS.310:Explanation-SAACONS,Transaction.Set850,SAACONS2.5

4.3 Data Maintenance (DM) Configuration Management

As part of the IC development process, it is expected that Functional Working Groups will identify code level, element level, and even transaction set level additions and modifications to X12 and UN/EDIFACT standards. These items must be raised on the appropriate form by the FWG, and submitted to the standards process for approval and incorporation in a subsequent version of the standard. The FESMCC Secretariat is responsible for collating, tracking and reporting the disposition of all data maintenance items which affect the Federal position. In order that all Federal data maintenance items can be tracked, it is important that FWGs submit items to the FESMCC Secretariat, who will then be in a position to identify and track all Federal Government related items. In what follows the Federal Government is principally concerned with two flavors of submissions to X12:

- (1) Data maintenance, which is submitted on an ASC X12 Work Request Form, or equivalent electronic format; and
- (2) New transaction set proposals, which are submitted on an ASC X12 Project Proposal Development Form.

Both of these forms, in addition to other relevant X12 forms, are available electronically from the FESMCC Secretariat. It should be ensured that DMs to the FESMCC Secretariat are clearly marked as "copy".

X12 holds trimester meetings every February, June and October, and the Technical Assessment Subcommittee (TAS) holds interim meetings in April, August and December. New DMs must be submitted to the X12 Secretariat 35 days prior to the X12 TAS meetings. Depending on when a DM package is submitted within the cycle, a final disposition and incorporation into the next version of the standard may take 9-21 months from initial submission. So timing is important, and the best time for submission of DMs is to the February meeting, in order to make it into the next Version of X12 later in the same year.

Currently, the EDI Registry is only available as a "demonstration" project, with limited downloading capabilities of transaction sets and ICs. Until enhanced capabilities are implemented, the following procedures to implement a paper-based DM tracking system will be in effect.

Agencies and the FWG are responsible for:

- (1) Developing technical positions and business justifications for data maintenance items, completing an X12 Work Request Form for each separately identifiable item, and submitting the package to the appropriate standards body. Where data maintenance items are in electronic format, electronic dissemination is encouraged prior to X12 meetings.

- (2) Supporting X12 functional meetings, in particular to defend Federal data maintenance positions. In order to gain the maximum support in the democratically operated X12 committees and ballots, the maximum amount of Federal representation is strongly encouraged.
- (3) Processing DM dispositions received and incorporating accepted DMs into the next appropriate update of all affected ICS.

The FESMCC Secretariat is responsible for disseminating data maintenance items using electronic processes when and as satisfactory methods can be developed.

Although new projects are only initiated in X12 after approval of a Project Proposal prepared by an ASC X12 subcommittee, anyone may make an initial request using the Project Proposal Form, and attaching one (only) X12 Work Request Form (as for data maintenance items, above). A project proposal often involves the parallel proposed development of multiple new segments, elements and/or codes. Although these will not be all approved together, in passage through the X12 process (i.e., some proposed new items will be rejected, for reasons of duplication or nonutility) all DMs associated with the new proposal are handled together as a single package, with a single DM number attached.

In some cases, the need for a new transaction set, or series, is identified by the FESMCC in conjunction with a need to spawn a new Federal Functional Working Group. As part of this process, the FESMCC Secretariat will allocate electronic communication means to the new FWG. The FESMCC is responsible for approval of new transaction set development activities, if necessary in conjunction with spawning a new FWG.

The FWG is responsible for

- (1) Development of new transaction sets
- (2) Completion of the Project Proposal Form, and an X12 Work Request Form, with technical and business justifications for new elements and codes, and attachment of data maintenance for all associated changes to existing elements and codes.
- (3) Submission of the package to NIST (simultaneously with submission to DISA, Inc.)
- (4) Provision of a champion to defend the package in its passage through the X12 process

The FESMCC Secretariat is responsible for:

- (1) Tracking and reporting progress through the X12 process
- (2) Publishing the disposition of the associated DM and notifying the FWG chair

- (3) Returning X12 dispositions to individual developer. The FESMCC Secretariat is collector of DMs, not submitter.

NOTE: Agencies developing new transaction sets outside of FWGs are encouraged to submit them to the FESMCC Secretariat for dissemination at the same time as submission to X12.

Figure 3 gives the X12 Data Maintenance Process, and Figure 4 gives the future Federal data maintenance process.

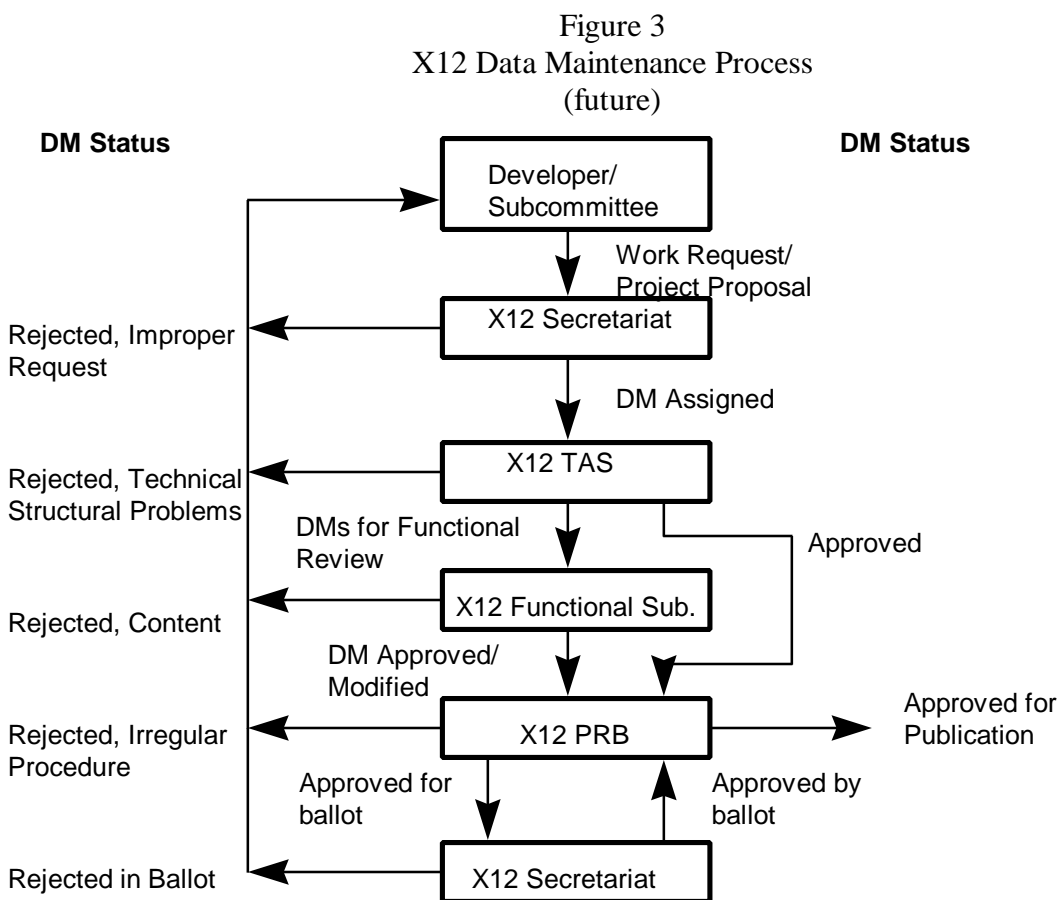
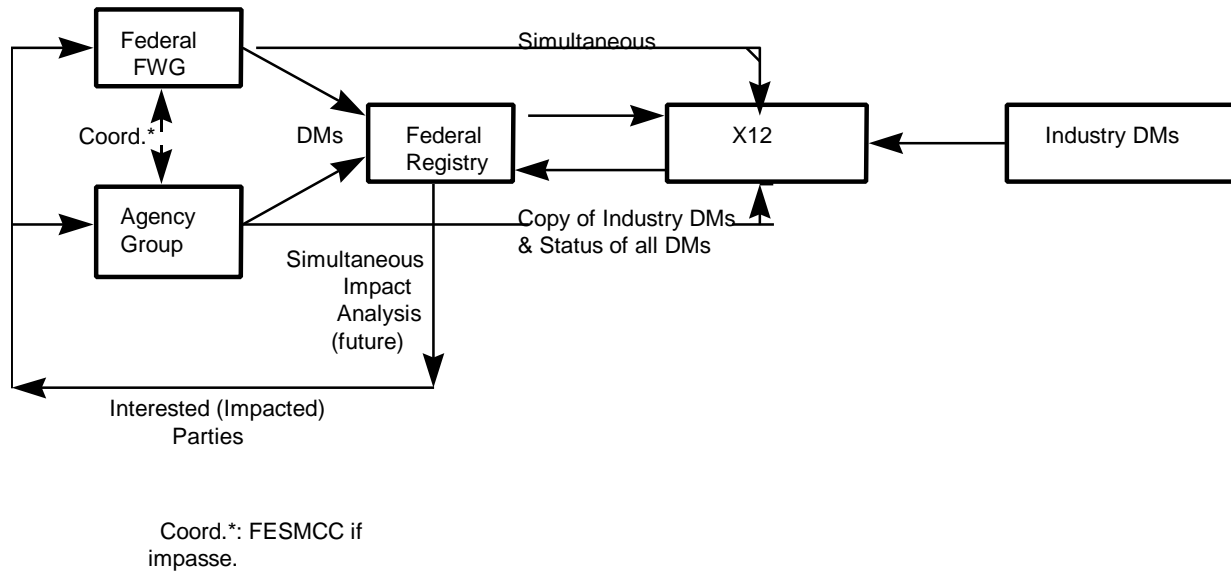


Figure 4
Federal Data Maintenance Process
(future)



4.4 X12 and UN/EDIFACT Procedures

In progressing Federal EDI requirements, these procedures have been developed to dovetail with the long established procedures of ASC X12. The X12 procedures are defined in ASC X12 EDI Standing Document 2: Operations Manual, containing development and maintenance procedures for standards, interpretations, guidelines, and technical reports. The UN/EDIFACT procedures are defined in ASC X12 EDI Standing Document 6: Operations Manual, Development and Maintenance Procedures for UN/EDIFACT Standards.

Appendix A: References

1. DOD ITSMP for EDI, Coordination Draft of 6 March 1996, available from DOD DISA, Center for Standards. NOTE: Different from DISA, Inc.
2. Presidential Memorandum for the Heads of Executive Departments and Agencies/The Presidents Management Council, subject: "Streamlining Procurement Through Electronic Commerce," 26 October 1993.
3. Streamlining Procurement Through Electronic Commerce, October 1994, NIST Special Publication 881-1.
4. Federal Information Processing Standard Publication No. 161 (FIPS PUB 161-2) "Electronic Data Interchange", May 1996, available from NIST.
5. OMB Circular No. A-119, Federal Participation in the Development and Use of Voluntary Standards, October 26, 1982.
6. ASC X12 Electronic Data Interchange, available from DISA, Inc.
7. UN/EDIFACT, available from DISA, Inc.
8. ASC X12 Electronic Data Interchange Standing Document 2: Operations Manual, Development and Maintenance Procedures for Standards, Interpretations, Guidelines and Technical Reports, Revised Edition 1996, available from the Data Interchange Standards Association.
9. ASC X12 Electronic Data Interchange Standing Document 6: Operations Manual, Development and Maintenance Procedures for UN/EDIFACT Standards, First Edition 1994, available from the Data Interchange Standards Association.

NOTE: Data Interchange Standards Association (DISA, Inc.), 1800 Diagonal Road, Suite 200, Alexandria, VA 22314, phone (703)548-7005 e-mail publications@disa.org

Appendix B: Acronyms

AG-Advisory Group
ANSI-American National Standards Institute
ASC-Accredited Standards Committee
BBS-Bulletin Board System
CBD-Commerce Business Daily
CFO-Chief Financial Officer
CM -Configuration Management
DISA-Defense Information Systems Agency
DISA, Inc.- Data Interchange Standards Association, Incorporated
DMR -Data Maintenance Request
DOD-Department of Defense
EC -Electronic Commerce
ECAT-Electronic Commerce Acquisition Team
EDI -Electronic Data Interchange
EDIFACT -EDI for Administration, Commerce, and Transport
E-mail -Electronic Mail
FESMCC - Federal EDI Standards Management Coordinating Committee
FIPS - Federal Information Processing Standard
FWG -Federal Working Group
HL7 -Health Level 7
IC -Implementation Convention
IRM-Information Resource Management
ISO-International Standards Organization (also known as International Organization for Standardization)
IT-Information Technology
JIEO -Joint Interoperability and Engineering Organization
MIME -Multimedia Internet Mail Extensions
NIST -National Institute of Standards and Technology
OFPP-Office of Federal Procurement Policy
OMB-Office of Management and Budget
PMC - President's Management Council
SDO -Standards Development Organizations
SMTP-Simple Mail Transfer Protocol
TP -Trading Partner
UN -United Nations
UN/EDIFACT -United Nations Electronic Data Interchange for Administration, Commerce, and Transport
VAN -Value Added Network
WG-Working Group
X.400-OSI Message Handling System
X12 -see ANSI ASC X12

Appendix C: Definitions

NOTE: These definitions have been evaluated where appropriate for consistency with the New IEEE Standard Dictionary of Electrical and Electronics Terms, IEEE Standard 100 - 1992

American National Standards Institute (ANSI) - Organization devoted to development of voluntary standards to enhance productivity and international competition of American industrial enterprises.

ANSI ASC X12 - Accredited Standards Committee X12 comprises industry members who create EDI standards for submission to ANSI for subsequent approval and dissemination or for submission to the United Nations Standards Committee for approval of international EDIFACT standards.

Base Standard - an approved International Standard, Technical Report or ITU-T Recommendation which is used in the definition of a profile

Compatibility - the capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference.

Configuration Management - a discipline applying technical and administrative direction and surveillance over the life cycle of standards to:

- (1) Identify and document the functional standards
- (2) Control changes to related documentation
- (3) Record and report information needed to manage standards effectively, including the status of proposed changes and implementation status of approved changes
- (4) Audit configuration items to verify conformance to existing standards, interface control documents, and other requirements

Develop - influence development and evolution of Federal, voluntary, and international standards. Create a new standard or profile or change a standard.

Data - items of information that have been gathered to be used in some type of process.

Database - collection of related records containing information to be used for processing. The records are broken down into individual fields that allow for various means of manipulating the data to produce specific, individualized reports.

Data Element - basic units of information in the EDI standards containing a set of values that represents a singular fact. They may be single-character codes, literal descriptions, numeric values, or

may have a specific size, type, and range.

Documentation - text file or book that comes with software describing the computer program. It tells the uses of the program as well as how to operate it.

Electronic Bulletin Board - bulletin board system that can be accessed with a modem for the purpose of exchanging information and acquiring files by downloading.

Electronic Commerce - end-to-end, paperless business environment that integrates electronic transfer and automated business systems.

Electronic Data Interchange (EDI) - exchange of routine business transactions in a computer-processable format, covering such traditional applications as inquiries, planning, purchasing, acknowledgements, pricing, order status, scheduling, test results, shipping and receiving, invoices, payments, and financial reporting.

E-mail - the generation, transmission, and display of correspondence and documents by electronic means.

Environment - universe within which the system must operate. All the elements over which the designer has no control and that affect the system or its inputs and outputs.

Gateway - a functional unit that interconnects several computers.

Information Technology (IT) Standards - provides technical definitions for information system processes, procedures, practices, operations, services, interfaces, connectivity, interoperability, information formats content, interchange and transmission /transfer.

Integrity - the degree to which a system or component prevents unauthorized access to, or modification of, computer programs or data.

Interoperability - the ability of systems, units or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable effective operation together.

Message - unit of information in a communications environment that is transmitted electronically from one device to another. There are several connotations of the term:

- (1) In electronic mail, a message is a note from another user, organized similar to a memorandum (TO, FROM, SUBJECT, DATE) and received in an electronic mailbox.
- (2) To a computer or a communications network, a message is a transmission unit that transmits according to certain rules (protocols) that are followed by both the sending and receiving

devices.

- (3) In software, a message is a piece of information passed from the application or the operating system to the user to suggest an action that must be taken, to indicate a condition, or to inform that an event has occurred.

Modem - shortened form of modulator/demodulator, a communications device that connects data terminal equipment to a communications line. Modems contain such built-in features as automatic phone dialing, auto answering, and mediating capabilities.

Network - in terms of communication or data transmission, a series of points interconnected by communications channels. In terms of software, an interconnected group of nodes. A network can involve permanent connections, such as cables, or temporary connections made through telephone or other communications links. A network can be as small as a local area network consisting of a few computers or many small and large computers distributed over a vast geographic area to provide computer users with the means of transferring information electronically. Some types of communication are simple user-to-user messages; others, of the type known as distributed processes, can involve several computers and sharing of workloads or cooperative efforts in performing a task.

Security - the protection of computer hardware and software from accidental or malicious access, use, modification, destruction, or disclosure. Security also pertains to personnel, data, communications, and the physical protection of computer installations.

Standard - set of detailed technical guidelines used as a means of establishing uniformity in an area of hardware or software development. Specifications are drafted by a cooperative group or committee after an intensive study of existing methods, approaches, and technological trends and developments. The proposed standards are later ratified or approved by a recognized organization and are adopted over time by consensus as products based on the standards become increasingly prevalent in the market.

Syntax - grammar or rules that define the structure of the EDI standards. The structure of expressions in a language.

Systems - a set of interconnected elements constituted to achieve a given objective by performing specified functions. A collection of people, machines, and methods organized to accomplish a set of specific functions.

Trading Partner - party involved in the exchange of EDI transmissions.

Transaction Set - definition, in the standard syntax, of information of business or strategic significance. Consists of a transaction set header segment, one or more data segments in a specified order, and a transaction set trailer segment.

Transfer Syntax - rules and conventions used in conveying information between two entities.

Value-Added Network - communications network that transmits, receives, and stores EDI messages for EDI trading partners. In terms of service, a communications service utilizing communications common carrier networks for transmission and providing added data services with separate additional equipment.

Appendix D: Federal IC Process

See Figure 2 for a flowchart.

Steps:

1. New IC Presented at FESMCC
2. If IC is single agency/application use (e.g., Customs, IRS)
 - (a) FESMCC endorses for posting
 - (b) In Registry for public comment
 - (c) Originator resolves comments (if other agencies report other uses, they are developed as later ICs)
 - (d) Registered as Federal IC
3. If multiple use (e.g., loans, procurement, finance, other)
 - (a) FESMCC assigns to FWG or Ad Hoc Group
 - (b) Draft for Interagency Review
 - (c) WG resolves comments
 - (d) FESMCC Secretariat issues CBD
 - (e) Registry for public comment
 - (f) FWG resolves comments
 - (g) FESMCC approves
 - (h) Issued and posted as approved Federal IC
4. If differing uses (statistical data, etc.)
 - (a) FESMCC verifies uses are differing and separate ICs do not affect Single Face.
 - (b) Each IC then follows 2 or 3 above as appropriate

Appendix E: Functional Workgroup Descriptions

1. PROCUREMENT FUNCTIONAL WORKGROUP

- (a) Membership-Procurement representative from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements of procurement community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC, as required.
- (c) IC-Primary.Cognizance.-251,501,503,504,505,805,832,836,838,840,843,850,855,860,865,869,870,875
- (d) IC-Joint Cognizance -824,864
- (e) IC-Interest -848,997
- (f) ICs Coordination-respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance-identify need and prepare documentation in specified format. Review private sector maintenance for impact.

2. FINANCE FUNCTIONAL WORKGROUP

- (a) Membership-Finance rep from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements of finance community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC as required
- (c) IC-Primary.Cognizance.-135,139,144,150,151,155,156,190,191,197,198,199,200,201,203,205,206,207,208,209,260,261,263,264,265,266,568,810,811,812,813,819,820,821,822,823,827,828,829,831,833,

835,837,844,849,872,876,880,920,924,980

- (d) IC-Joint Cognizance -110,210,310,410,824,864
- (e) IC-Interest.-104,152,180,196,204,251,404,501,505,511,517,527,536,561,832,838,839,842,847,850,854,858,859,860,861,867,869,870,875,940, 945,947,996,997,998
- (f) ICs-coordination-respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance -Identify need and prepare documentation in specified format
Review private sector maintenance for impact

3. LOGISTICS FUNCTIONAL WORKGROUP

- (a) Membership-Logistics representative from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements of logistics community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC, as required.
- (c) IC-PrimaryCognizance.-140,141,142,143,152,180,186,196,511,517,527,536,561,806,816,830,839,841,842,846,848,852,854,856,857,861,863,867, 871,888,940,943,944,945,947
- (d) IC-Joint Cognizance -824,864
- (e) IC-Interest -819,821,827,832,838,869,870,997
- (f) ICs Coordination-respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance-identify need and prepare documentation in specified format.
Review private sector maintenance for impact.

4. TRANSPORTATION FUNCTIONAL WORKGROUP

- (a) Membership-Transportation representative from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements of transportation community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC, as required.
- (c) IC-Primary Cognizance-104,204,213,214300,301,303,304,312,313,315,362,404,422, 601,602,853,858,859
- (d) IC-Joint Cognizance -110,210,312,410,824,864
- (e) IC-Interest-820,838,842,856,997
- (f) ICs Coordination-respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance-identify need and prepare. documentation in specified format. Review private sector maintenance for impact.

5. COMMUNICATIONS, CONTROL AND SECURITY FUNCTIONAL WORKGROUP

- (a) Membership-Designated representative from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements of relevant community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC, as required.
- (c) IC-Primary Cognizance- 242,815,996,997,998
- (d) IC-Joint Cognizance-824,864
- (e) IC-Interest
- (f) ICs Coordination-respond to private sector and agency feedback

- (g) ASC X12 Data Maintenance-identify need and prepare documentation in specified format. Review private sector maintenance for impact.

6. HEALTHCARE FUNCTIONAL WORKGROUP

- (a) Membership-Healthcare representative from each agency; liaison from other FWGs as required.
- (b) Responsibilities-identify requirements of Healthcare community (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC, as required.
- (c) IC-Primary Cognizance - 148,186,270,271,275,276,277,500,834,835,837
- (d) IC-Joint Cognizance-824,864
- (e) IC-Interest-820,838,997
- (f) ICs Coordination-respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance-identify need and prepare documentation in specified format. Review private sector maintenance for impact.

7. ADHOC FUNCTIONAL WORKGROUPS

- (a) Membership-Rep from each agency; liaison from other FWGs as required
- (b) Responsibilities-identify requirements (both Government and private sector) to conduct electronic data interchange (EDI), map them into X12 transaction sets or UN/EDIFACT messages and develop ICs; update as required for new version/releases in accordance with the Federal schedule. Present functional business case to the FESMCC as required.
- (c) IC-Primary Cognizance as assigned
- (d) IC-Joint Cognizance as assigned
- (e) IC-Interest

- (f) ICS-coordination -Respond to private sector and agency feedback
- (g) ASC X12 Data Maintenance-Identify need and prepare documentation in specified format.
Review private sector maintenance for impact.

Appendix F: Future Methods and Tool Support

F.1 Introduction

An important concept which distinguishes this EDI standards development movement in the Federal Government is that standards development is itself a process which can be, and needs to be, improved by the application of automated, distributed methods, and in particular, that EDI standards should be developed by EDI methods: if you can trade with your partners using a network, you can work with your professional colleagues across the agencies to improve electronic data standards electronically.

In large part, the standards development and configuration management described previously can be conducted electronically. This chapter describes the architecture and associated tools which make this possible.

F.2 Architecture

The Federal Government EDI Standards Development Architecture is depicted in the following series of diagrams. At its heart is a Federal Implementation Convention Registry which serves as a repository and compliance checker for current and prior Federal ICs for X12 and UN/EDIFACT and for all functional areas in which the Government has a business interest. The Registry is syntax independent in the sense that it can check and store both X12 and UN/EDIFACT based ICs. The Registry is accessed and serviced by commercial EDI tools which communicate using a UN/EDIFACT (IMPDEF) or ASNI ASC X12 995 TS transfer syntax. It includes a compliance checker which determines whether newly input ICs are compliant with the specified standard and version. Figure 5 gives the Registry structure.

The Registry is also available for simple downloading of the ICs, by trading partners, agencies, and other EDI users, or, in fact, by anybody with an Internet connection. The Registry accepts ICs in SEF format.

The main Registry is located at NIST. Figure 6 shows Registry communications.

Figure 5
Registry Structure

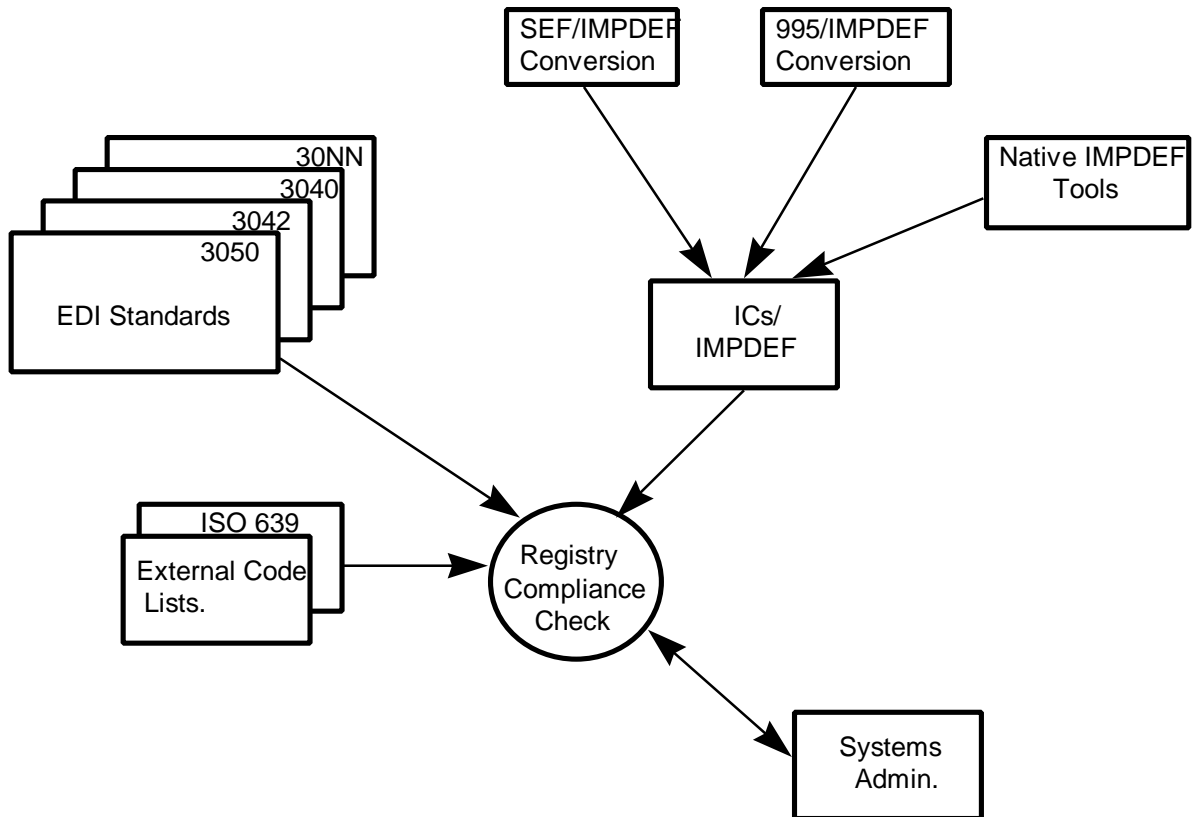
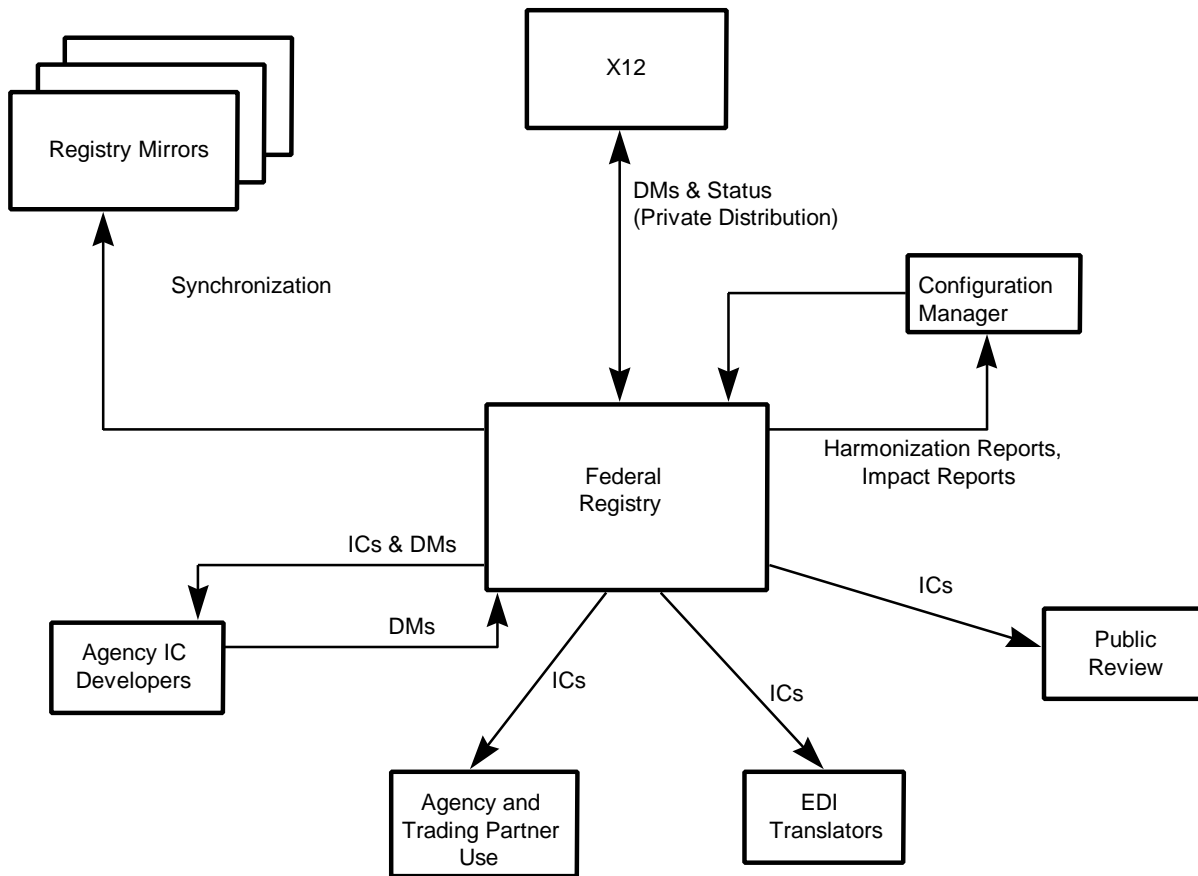


Figure 6
Registry Communications



F.3 Objects and their Operations

Basic objects in the automated Standards Management Architecture are:

- (1) Registry Compliance checker and Query Processor .The heart of the Registry is a processor which operates on an implementation convention, and a given version of the standard (X12 or UN/EDIFACT), plus associated code .lists, and yields a compliance check. The external interface for registration and compliance checking activities is a mail-server query processor. Commands include:
 - (a) Check-input an IC and produce a compliance check against a given

standard/version. This is a syntax check without registering.

- (b) Register-validate the IC, including any external code lists. If valid, register it.
 - (c) Show message-list all messages/ICs which have been registered.
 - (d) Show org - list all organizations which have registered an IC (on a per FWG basis?)
 - (e) Help - list all available commands
- (2) A database of versions of X12 and UN/EDIFACT . This database is comprised of the base standard versions of all X12 and UN/EDIFACT transaction sets of interest to the Federal Government, plus "working sets" representing, in effect, draft updates to the standard for submission to the standards working groups. The current condition includes ASC X12 3040, 3050, and UN/EDIFACT D94B. Subject to available storage space, and FESMCC policy, historical versions of the base standards will remain accessible in this database.
- (3) A database of implementation conventions. Each set of implementation conventions developed by a Federal FWG/AS, based on a particular version of the above standard, is sorted in the Registry.

F.4 Registry Clients

The Registry has a variety of clients, including agency and trading partner users, standard/IC developers, and their associated EDI support tools. These include:

- (1) Simple tools for storing, viewing, printing, and selecting elements of a standard, and creating implementation conventions. These are useful for agencies, their trading partners, business process re-engineers, and in general anybody with a need to view the standard and create ICs, and a preference to view it on-line rather than on paper
- (2) Development tools, which allow the creation of new codes, elements, and transaction sets, and in addition allow the selection of Registry commands. These are useful for agency and industry message developers involved in data maintenance and IC creation
- (3) EDI translators which use implementation conventions to create EDI messages for sending to trading partners, and decode received EDI messages. These are used by agency and trading partner procurement operations which are doing business using EDI
- (4) The Internet: the Registry can be accessed through its mail-query interface, via SMTP and

MIME.

F.5 Communications Media

The Registry and its access tools communicate using an intermediate representation which can carry both X12 transactions and UN/EDIFACT messages. This intermediate representation is currently being progressed as a message in X12.

F.6 Security

Obviously it is imprudent to permit uncontrolled access and changeability to all aspects of the Registry. Levels of authorization will be as follows:

- (1) Simple access: anybody with Internet E-mail or a modem capability can access the Implementation Conventions Registry, and read it only
- (2) Authorized standards developers can read from, and add to the DMR Registry. This authority is ultimately granted by the FESMCC
- (3) Only the Configuration Manager can add or delete new implementation convention sets, delete Data Maintenance Requests, allow developer-level access operationally, or in any other way purge the system

F.7 Mirrors

An extra level of security, and useability, is granted to the IC management system, if the Registry is available from extra sites, in addition to the base. There is always the potential for a site to temporarily lose network access, be crashed, or become otherwise unavailable. For this reason it is envisioned that other agencies will volunteer to maintain "mirror sites" which contain an exact copy of the Registry. Synchronization between the base and its mirrors is usually maintained with special mirror synchronization software. However, in the event of temporary loss of synchronization, the authoritative source will be the base site.

F.8 Archives and Coordination Media

In addition to the database aspects of the Registry, ongoing communication and coordination between FWG and FESMCC members, and with concerned trading partners, may be necessary. This can be most effectively performed in two ways:

- (1) For each working group a "listserv" type mailing list will be established. Those involved, or merely interested in the ongoing discussions can subscribe to the mailing list, and send and receive multicast e-mail. Accumulated e-mail will be periodically backed up and archived as a historical record of the issues relating to EC/EDI development in the Federal Government. Membership of these lists will be controlled to include responsible agency developers, and their designated agents. These archives will be available through dial-up access, for those interested participants who are currently without Internet e-mail capability.
- (2) For wider public dissemination of Federal Government EC/EDI development issues, there is consideration for establishing a Usenet newsgroup, which will be fed by the above mailing lists. Although public access to the mailing lists will not be possible, individual e-mail precipitated by newsgroup activity is always encouraged.

F.9 Future Functions

Extensions to the Registry are currently planned which will allow the automatic production of data maintenance requests; automatically notify changes to registered interested parties; produce impact reports, denoting the impact of any proposed change against the standard, and against other ICs; produce a harmonization report of the differences between new and existing ICs.

Additional objects are:

- (1) DMR "Generator" . Given a new IC, the DMR generator makes a comparison against the existing standards, and for every place where a change to the standard is called for, a DMR is generated, in a format suitable for input to the X12 or EDIFACT standards process. These DMRs are generated as an output of the "check" command.
- (2) The Interest Register. this is a list of organizations e-mail addresses, cross- referenced against standards, or ICs. Entries are attached to this Register when an organization sends a message to the Registry, declaring an "interest" in a transaction set, data element, code or some multiple thereof. When a DM is generated, the interest list pattern is matched against every item in the DM. An e-mail is generated whenever an "interest" profile is matched.
- (3) The Impact Report Generator . A further consequence of issuing DMs is that a systematic check is made against the relevant standard, and the cumulative impact of proposed changes against transaction sets and elements is calculated. When other Registries are up and running, it will be possible to cooperatively share DM information between Registries, for cross-checking, to determine the impact of any DM against any other ICs.
- (4) The Harmonization Report Generator. Given a new IC, a harmonization report is generated, which lists the differences between the given IC and an existing IC. A further generalization of

this function yields a multi-way difference list, showing the differences between the new IC, and other ICs in other registers.

Appendix G: FESMCC Membership

Current FESMCC members:

Agriculture
Commerce
Defense
Education
Energy
EPA
GSA
HUD
Interior
Justice
Labor
Transportation
Treasury
VA
US Courts